

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
30 October 2003 (30.10.2003)

PCT

(10) International Publication Number
WO 03/088998 A1(51) International Patent Classification⁷: A61K 39/395, C12N 15/62, 15/79, 1/21, A61K 31/7088, A61P 35/00

(74) Agent: SCHÜSSLER, Andrea; Huber & Schüssler, Truderinger Strasse 246, 81825 München (DE).

(21) International Application Number: PCT/EP03/03928

(81) Designated States (national): AE, AG, AL, AM, AT, AU,

(22) International Filing Date: 15 April 2003 (15.04.2003)

AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

02008845.6 19 April 2002 (19.04.2002) EP

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): AF-FIMED THERAPEUTICS AG [DE/DE]; Im Neuenheimer Feld 582, 69120 Heidelberg (DE).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(72) Inventors; and

(75) Inventors/Applicants (for US only): KIPRIYANOV, Sergey [RU/DE]; Leiblweg 3, 69126 Heidelberg (DE). LE GALL, Fabrice [FR/DE]; Hauptstrasse 118, 68535 Edingen-Neckarhausen (DE). COCHLOVIUS, Björn [NO/NO]; Lønnveien 1, N-344 Haslum (NO). LITTLE, Melvyn [GB/DE]; Fritz von Briesen Strasse 10, 69151 Neckargemünd (DE).

WO 03/088998 A1

(54) Title: ANTIBODY COMBINATION USEFUL FOR TUMOR THERAPY

(57) Abstract: Described is a combination of at least two antibodies, characterized by the following properties: (a) it comprises at least two different multivalent antibodies, each one having at least two specificities and being characterized by features: (b) + (d) for at least one of said two different multivalent antibodies, and (b) + (c) for at least one of said two different multivalent antibodies, (b) is an antigen-binding domain specific to a tumor antigen, (c) is antigen-binding domain specific to an antigen present on human T cells, and (d) is an antigen-binding domain specific to an antigen present on CD3-epsilon negative human effector cells. Also disclosed are polynucleotides encoding said antibodies as well as vectors comprising said polynucleotides, host cells transformed therewith and their use in the production of said antibodies. Finally, compositions, preferably pharmaceutical and diagnostic compositions, are disclosed comprising the above mentioned polynucleotides, antibodies or vectors. The pharmaceutical compositions are useful for immunotherapy, preferably against B-cell malignancies, B-cell mediated autoimmune diseases and diseases associated with depletion of B-cells.